

REMARKS

Consideration of the above identified application in view of the preceding amendments and following remarks is respectfully requested. Claims 1, 2, 5-8, 10-21, and 31-39 are pending in this application.

I. Claim Rejections - 35 U.S.C. § 103

In the Office Action, Claims 1, 2, 5, 6, 8, 10-21, and 31-39 were rejected under 35 U.S.C. §103 (a) over PCT Application Pub. No. WO 03/005764 to Browne et al. in view of U.S. Publication No. 2004/0062405 to Corsaro. The Examiner's grounds for rejection are herewith traversed, and reconsideration is respectfully requested.

It is submitted that the combination of these references is improper because nothing in the references provides the requisite motivation to combine them. It is therefore submitted that the Examiner has erred in rejecting the claims presently on file. Reversal of the objections is requested.

On page 3 of the Office Action the Examiner contends “it would have been obvious to one of ordinary skill in the art ... to select any appropriate hardness to realise the desired acoustical coupling including a coupler having a Shore A hardness of no more than 20, as taught by Corsaro”. The Applicant submits that the Examiner has erred in his assertion.

It is submitted that the reasoning for combining Browne and Corsaro does not meet the requisite standard that a rejection of a patent claim on obviousness grounds cannot be sustained by a conclusory statement. There must, instead, be articulated reasoning with rational underpinning to support a legal conclusion of obviousness. The Examiner has not provided specific reasoning supporting the alleged combination and thus has failed to present a *prima facie* case of obviousness.

Applicant submits that the combination of Corsaro with Browne is improper and thus the Examiner has failed to make the requisite *prima facie* case of obviousness. More specifically, the Examiner has failed to show proper teaching, suggestion or motivation for combining the references.

In the remarks submitted with the response filed on January 28, 2009, Applicant submitted that Browne states in the sentence bridging pages 2 and 3 “the portion of the membrane between the foot and the surface may be of either the flexible elastomeric material or a harder or softer portion of different material from the rest of the membrane to achieve the desired acoustic coupling”. Thus, Browne provides no clear direction to the skilled reader to vary the hardness of the elastomeric material itself but rather to use a harder or softer portion of different material. Browne is unclear as to whether or not the ‘different material’ is a resilient (e.g. elastomeric) material as is required by claim 31. Applicant considers these remarks to stand with respect to the Examiner’s present objection that the subject matter of claim 31 is obvious over Browne in view of Corsaro. Hence, it is submitted that upon reading Browne the skilled reader is provided with no teaching, suggestion or motivation to vary the hardness of the elastomeric material.

Corsaro relates to an acoustic actuator tile for noise control or noise cancellation applications. Thus, a reader of ordinary skill in the art would be disinclined to consider applying the actuator tile teachings of Corsaro to the acoustic device disclosed in WO 03/005764 (Browne). This disinclination would be reinforced upon reading the statement in paragraph [0045] of Corsaro that the “overall structure of the device is mechanically rigid compared to the much more compliant typical prior art light weight and low frequency acoustic sources, such as loudspeakers”.

Aside from the issue of Corsaro being far afield from Browne, for the sake of argument, Corsaro relates to an acoustic device that operates on the pistonic principle. For example, at lines 11 to 13 in paragraph [0024] it is stated that the “drivers … drive the face plate in a piston-like fashion” and in the last four lines of paragraph [0027] that “the location of strip 14 … is related to piston-like motion”. Also, in lines 5 to 9 of paragraph [0028] “bender element 12(a) is secured to face plate 10 through strips 13 … to produce piston-like … displacement” and in lines 10 to 12 of paragraph [0043] it is stated “throughout this entire frequency regime … the face plate continued to move in a piston-like fashion”. In addition, in lines 1 to 4 of paragraph [0045] it is stated that the “unique feature of this invention … is the high acoustic output and the associated uniform piston-like displacement profile”. Therefore it is clear that according to Corsaro the actuator (12) moves in a pistonic fashion and is coupled to the acoustic radiator (10) such that it causes the acoustic radiator (10) to move in a pistonic fashion. Browne, on the other hand, discloses an actuator that is coupled to an acoustic radiator to cause the acoustic radiator to move in a distributed mode fashion. Hence, it is submitted that the reader of ordinary skill having the driver apparatus of Browne in mind would not be motivated to consider combining the content of Corsaro with Browne on account of a fundamental difference in their respective modes of operation, namely pistonic operation versus distributed mode operation.

Even if the above discussed questions of motivation were disregarded, Corsaro is inconsistent with regards to its passing mention in paragraph [0042] of use of rubbery strips with a Shore A hardness of 10 to couple the actuator to the face plate. In lines 1 to 3 of paragraph [0032] of Corsaro, it is stated that “strips 13 should be … relatively flexible in the horizontal (x) direction but … rigid in the vertical (y) direction”. As can be seen from Figure 1(b) of Corsaro, the horizontal (x) direction is across the surface of the face plate (10) and the vertical (y)

direction is the direction in which the actuator (12) and the face plate (10) move together when describing their pistonic movement. Rigidity in the vertical (y) direction would be understood by the reader of ordinary skill as a requirement to couple the pistonic movement of the actuator (12) of Corsaro to the face plate (10) to cause a corresponding pistonic movement of the face plate (10). Rigidity in the vertical (y) direction is difficult to reconcile with a material having a Shore A hardness of 10.

In addition, it is stated in lines 6 to 12 of paragraph [0025] of Corsaro that “the strips (13) allow adequate “give” at edges of the drivers (12) to allow for greater displacement in the middle of each driver as opposed to the condition where the driver edges are rigidly clamped”. In other words, “give” in the horizontal (x) direction accommodates the change in shape that the actuator (12) experiences as it moves through a complete piston cycle and reduces the adverse effect on performance that the change in shape would otherwise produce. As can be appreciated from an inspection of Figure 1(b) and reading lines 9 to 13 of paragraph [0028] in which it is stated that “the driver element contracts pulling on the bender element reducing its curvature”, the width of the actuator in the horizontal (x) direction changes during pistonic movement of the face plate. Therefore, the reader of ordinary skill would understand that the mention in Corsaro of a material having a Shore A hardness of 10 is to address behaviour that is particular to the actuator of Corsaro, i.e. the change in shape of the curved, piezoelectric actuator. Thus, it would be clear to the reader of ordinary skill that the mention in Corsaro of a material having a Shore A hardness of 10 is to address a problem associated with curved, piezoelectric actuators and not to achieve a desired acoustical coupling in a distributed mode apparatus.

In summary, it is submitted that Corsaro fails to provide the skilled reader with the motivation to select a Shore A hardness of no more than 20 for a resilient acoustic coupler

because of: the different field of application of Corsaro; the fundamentally different pistonic mode of operation of Corsaro; and the entirely different problem addressed by Corsaro by use of elastomeric couplers.

Unless references suggest the claimed combination of elements themselves, they cannot show the invention was obvious. As submitted above, neither Browne nor Corsaro provides the skilled reader with the motivation to select a Shore A hardness of no more than 20 for a resilient acoustic coupler.

Applicant submits that the Examiner could only arrive at a conclusion of obviousness through hindsight analysis by reading Applicant's own inventive teaching and by selecting elements from Browne and Corsaro that he deemed relevant to the teachings of the present invention. Such decomposition of an invention into its constituent elements, finding each element in prior art and then claiming it is easy to reassemble these elements into the invention is forbidden ex post facto analysis.

In view of the foregoing, Applicant submits that the cited combination of Browne and Corsaro is in error and does not render the claimed invention obvious. Furthermore, to use the present application as motivation to combine the references is improper hindsight analysis. Applicant therefore submits that the invention of claim 31 is not obvious because no *prima facie* case of obviousness has been established and an action acknowledging the same is respectfully requested.

II. Conclusion

Any additional fees or overpayments due as a result of filing the present paper may be applied to Deposit Account No. 04-1105. It is respectfully submitted that all of the claims now remaining in this application are in condition for allowance, and such action is earnestly solicited.

If after reviewing this amendment, the Examiner believes that a telephone interview would facilitate the resolution of any remaining matters the undersigned attorney may be contacted at the number set forth herein below.

Respectfully submitted,

Date: July 13, 2009

Electronic signature: /George N. Chaclas/
George N. Chaclas, Reg. No. 46,608
Edwards Angell Palmer & Dodge LLP
Attorney for Applicant
P.O. Box 55874
Boston, MA 02205
Tel: (401) 276-6653
Fax: (617) 439-4170
Email: gchaclas@eapdlaw.com